

SEASPAN AND INNOVATION

Seaspan is pleased to contribute to the federal government's interest in stimulating and sustaining innovation in the Canadian economy. We hope that the Seaspan story is helpful to you in your deliberations.

Our summary input to the federal government is as follows:

- *Seaspan's innovation path was launched thanks to Canada's long-term National Shipbuilding Strategy (NSS) and the opportunity to build ships for the Canadian Coast Guard (CCG) and Royal Canadian Navy (RCN) for decades to come;*
- *NSS can drive innovation in our domestic supply chain if the government's procurement and contractual frameworks enable it;*
- *The use of common equipment and systems across the NSS program can induce innovation within the Canadian shipbuilding and marine industry sectors;*
- *Collaborative industry-government research through DRDC can once again produce operational capability for the Canadian Armed Forces (CAF) and exportable technologies for Canadian industry; and,*
- *The NSS is proving to be a catalyst for human capacity development that supports Canada's socio-economic agenda.*

As an advanced manufacturing business developing a West Coast centre of excellence in shipbuilding, Seaspan Shipyards is actively engaged in innovation across our enterprise, including: shipyard layout for optimal ship construction, ship design methods, planning and production practices all supported by a culture of continuous learning through our performance improvement department. Effective implementation of these elements is essential to our ability to manage program risks, contain costs and adhere to program schedules – they are the 'secret sauce' to our long-term competitiveness that will enable us to serve government and commercial customers in Canada and abroad.

As shipbuilders, our appetite to build ships is obvious. The catalyst for us to do so was the National Shipbuilding Strategy (NSS), a long-term, predictable market opportunity that gave us the corporate confidence to invest our own money to modernize our shipyards in Vancouver and Victoria to build ships efficiently for our customers.

Canada's long-term commitment to the NSS creates an opportunity to pre-position Canada's marine industry for success in the international marketplace. This can be achieved by leveraging NSS procurements to encourage the creation of long-term supplier relations between Seaspan and its NSS supply chain. With a predictable market opportunity before them, suppliers will be more likely to invest in new plant and innovation, attract and retain a qualified workforce for the long-term and generate economies of scale that will provide cost savings to their customers and export opportunities for the supplier. Seaspan's ability to enter into long-term supplier arrangements depends in large measure on our NSS contractual framework with the federal government. In the current NSS environment, we are working under task-based, per project contracts, which reduce our suppliers' incentive and opportunity to innovate.

In the same vein, the use of common equipment across the NSS program of work we are scheduled to build in Vancouver will provide further impetus to our supply chain to adopt their

own innovative best practices because they will see a predictable market for them to invest in. Accomplishing this will also contribute directly to lower life cycle training, sparing and system/equipment upgrade costs to the Canadian Navy and Coast Guard fleets. For this to be achieved, our federal customers will have to make equipment and systems decisions at the requirements and design scope stages of projects.

We wish, as well, to emphasize the importance of collaborative R&D between industry and government in the innovation cycle. Thanks to our NSS Value Proposition commitments, Seaspan is actively looking to invest in innovative technologies within Canada's marine industrial base. Opportunities for us to do so will increase as our NSS program of work matures.

Defence Research Development Canada (DRDC) is the research arm of the Department of National Defence. It is in business to research and develop capabilities to support the Canadian Armed Forces. Historically, it has done so successfully in collaboration with Canadian industry and there are many examples of where government-industry collaboration has produced operational capability for CAF and exportable technologies for Canadian industry (e.g. the origins of MDA and CAE can be traced back to DRDC collaboration).

Over the past five years, however, DRDC's budgets have been reduced and, along with it, their capacity to develop and adapt technologies and capabilities to meet CAF mission requirements. At the same time, DRDC has also been expected to develop revenue-generating measures that have put it in conflict with industry partners (i.e. intellectual property ownership and royalties issues). These developments have been a significant disincentive for industry to work collaboratively with DRDC. When these budget and operating practice shortfalls are addressed, Seaspan would be very interested to consider investments into DRDC technology development that provides benefit to the Canadian Navy, the NSS program and to the commercial interests of Seaspan.

Finally, as Seaspan's long-term relationship with the federal government continues to develop under the NSS with our Coast Guard and Canadian Navy customers, we will evolve into a West Coast shipbuilding centre of excellence that will stimulate and attract innovation and commercial activity across Canada's marine industry and the broader innovation community. We have already seen an expanding interest in careers in our sector that haven't existed for decades and it is being manifested, today, across a broad cross section of Canadian society, including Aboriginal Canadians. Over the past two years, almost 60 Interns have benefited from work terms at Seaspan and half of our 2016 cohort of apprentices originate from Aboriginal communities across the Lower Mainland of British Columbia.

In addition to our in-house program for Interns and Apprentices, Seaspan is encouraging career opportunities in our sector among young Canadians more generally through its multi-year, multi-million dollar investments at the British Columbia Institute of Technology (BCIT) to support Aboriginals in trades; Camosun College to support women in trades; and, the Canadian Welding Association (CWA) Foundation for both new welding equipment and teacher professional development intended for high school students. The NSS has been the catalyst for each of these investments.



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In short, Seaspan's opportunity to optimize and sustain a positive impact on Canada's innovative economy and society is being leveraged by the federal government's continuing, long-term commitment to the principles of the NSS and to the benefits that have already begun to materialize.